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| 10/020,692 | 12/14/2001 | David Alan Burton | SJO920010194US1 | 1341 |
| 46917 | 7590 | 03/11/2005 | EXAMINER | |
| KONRAD RAYNES & VICTOR, LLP. ATTN: IBM37 315 SOUTH BEVERLY DRIVE, SUITE 210 BEVERLY HILLS, CA 90212 | | | NGUYEN, VAN H | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2126 | |

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/020,692

Applicant(s)

BURTON ET AL.

Examiner

VAN H NGUYEN

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-65 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/14/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/17/02 and 6/25/
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is in response to the application filed on December 14, 2001.
2. Claims 1-65 are presented for examination. Claims 1, 20, 35, 48, 54, and 60 are independent claims.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2, 8, 21, 27, 36, 42, 49, 55, and 61 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
 - a. As to claims 2, 21, 36, 49, 55, and 61, "the caller" lacks antecedent basis. Claims 2, 21, 36, 49, 55, and 61 have no "a caller" term that defines or supports the given reference.
 - a. As to claims 8, 27, and 42, "the Java Remote method Invocation (RMI) classes" lacks antecedent basis. Claims 8, 27, and 42, have no "Java Remote method Invocation (RMI) classes" term that defines or supports the given reference.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Jones et al.** (U.S. 6,134,603) in view of **Guthrie et al.** (U.S. 6,385,661 B1).

7. **As to claim 1:**

- a. Jones the invention substantially as claimed including a method for implementing a remote method call (*e.g., the invocation of a remote method on a remote object is implemented using java RMI; col.8, lines 8-10*), comprising:
- (i) generating remote objects (*e.g., creation of remote object; col.5, lines 29-32/ an object on server 312 is created as remote object...all remote objects; col.10, lines 38-45*);

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- (ii) generating at least one proxy object (*e.g., a stub 304; col.8, lines 12-16 and lines 46-49*), where each proxy object corresponds to one remote object (*e.g., a stub 304 referencing remote object 314; col.8, lines 11-12*);
 - (iii) including data (*e.g., a hash value identifying remote method 316... parameter arguments to be used by remote method 316; col.9, lines 55-67*) from the remote object into the proxy object;
 - (iv) processing a call to a method on one proxy object (*e.g., makes an RMI call 310 to server 312 to remotely invoke a method; col.9, lines 52-56*); and
 - (v) executing the method (*e.g., server 312 invokes method 316 using the received parameter argument values in RMI call 310; col.9, lines 66-67*), wherein the method is one of a plurality of methods (*e.g., methods; col.10, lines 5-14*), wherein at least one of the plurality of methods comprises a local method (*e.g., a local method; col.8, lines 57-67*), including code to perform method operations (*col.8, lines 57-67*) and at least one other of the plurality of methods comprises a remote method (*e.g., a remote method; col.8, lines 55-56*), including code (*col.8, lines 55-56*) to perform method operations on the remote object (*e.g., server invokes the remote method using the received parameter arguments; step 506, fig. 5 and server return the result of the method invocation; step 508, fig.5*).
- b. Jones does teach a local method, including code to perform method operations, the proxy object and the remote object, but is silent on performing method operations on the proxy object without going to the remote object.

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- c. Guthrie teaches performing method operations on the proxy object without going to the remote object (*e.g., since proxies perform specific tasks such as controlling access to or communications with the objects they present...proxies contain unique computer code to accomplish their assigned function; col.6, lines 28-42*).
 - d. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Jones with Guthrie because Guthrie's teachings would have provided the capability for dynamically generating remote proxy classes. The advantages of dynamic generation of remote proxy classes includes reduced system development time, reduced system compile and build time, reduced system modification time, and reduced system storage requirements.
8. **As to claim 2:**
- Jones teaches processing data in the proxy object from the remote object, wherein remote object data is returned to the caller from the proxy object (*col.9, line 66-col.7, line 2*).
9. **As to claim 3:**
- Jones teaches transmitting a request to instantiate a proxy object for one specified remote object (*col.8, lines 10-13*) and a specified proxy class (*col.8, lines 47-48*); generating the proxy object in response to the request (*col.8, lines 13-15*); calling an initialization method from the specified proxy class to add data from the specified remote object to the generated proxy object (*col.8, lines 50-55 and col.9, lines 55-67*); and returning the generated proxy object for use in accessing the remote object (*col.8, lines 47-49*).

10. **As to claim 4:**

Jones teaches the proxy object class is a subclass of a remote object class (*col.8, lines 40-42*), wherein the remote objects are instantiated from at least one remote object class (*col.9, lines 59-65*), and wherein each remote object class is a subclass of a communication protocol class providing methods and attributes (*col.10, lines 30-48*).

11. **As to claim 5:**

Jones teaches generating a client communication object (*304; fig. 3*); and generating a server communication object (*314; fig. 3*), wherein the client and server communication objects enable communication therebetween (*col.8, lines 6-12*).

12. **As to claim 6:**

Jones teaches one client communication object is generated for each server communication object to which the client communication object will communicate (*col.8, lines 8-13*).

13. **As to claim 7:**

Jones teaches each client communication object is instantiated from a client communication class (*col.8, lines 8-13*) and wherein each server communication object is instantiated from a server communication class (*col.8, lines 8-13*), wherein the client and server communication classes implement methods from a communication protocol class (*col.8, lines 8-13*).

14. **As to claim 8:**

Jones teaches the communication protocol class comprises the Java Remote Method Invocation classes (*col.6, lines 49-53 and col.9, lines 52-56*).

15. **As to claim 9:**

Jones teaches the client communication object manages communication with the server communication object for a plurality of proxy objects (*step 500; fig. 5*) on which remote methods are invoked to execute on corresponding remote objects (*steps 500 and 506; fig. 5*).

16. **As to claim 10:**

- a. Guthrie teaches the client communication class includes code to handle error exceptions generated from the communication protocol class in response to executing remote methods on the plurality of proxy objects (*col.8, lines 55-58*).
- b. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Jones with Guthrie because Guthrie's teachings would have provided the capability for enabling the client to uniquely identify the remote method without identifying an incorrect method.

17. **As to claim 11:**

Jones teaches the server communication object comprise a first server communication object (*col.9, lines 29-31*), respectively, and wherein executing one remote method further comprises: passing the remote method to the client communication object (*col.8, lines 10-15*); transmitting to the server communication object, with the client communication object, an invocation method specifying the remote method on one specified remote object to the server communication object (*col.9, lines 52-58*); determining, with the server communication object, whether the remote object specified in the received invocation method is accessible through a second server communication

object (*col.9, lines 59-65*); and transmitting, with the first server communication object, the received invocation method to the second server communication object to execute against the specified remote object (*col.9, line 66-col.10, line 2*).

18. As to claim 12:

Jones teaches executing, with the second server communication object, the remote method specified in the invocation method on the specified remote object (*step 506; fig.5*); returning, with the second server communication object, data generated in response to execution of the remote method on the specified remote object to the client communication object (*step 508; fig.5*).

19. As to claim 13:

Refer to claim 10 above.

20. As to claim 14:

- a. Guthrie teaches the remote object and proxy object are implemented in a same computer device, and wherein the local and remote method perform their operations on the same computer device (*col.7, lines 10-16*).
- b. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Jones with Guthrie because Guthrie's teachings would have provided the capability for facilitating communications between objects implemented in the distributed computer system.

21. **As to claim 15:**

Jones teaches the remote objects are generated on a server system (312; *fig.3*), wherein the call to the method on one proxy object occurs on a client system (302; *fig.3*), wherein the server and client systems communicate over a network (108; *fig.1*), the remote method includes code to execute remotely on the server to perform method operations on the remote object on the server (*steps 506 and 508; fig. 5*). Refer to discussion of claim 1 above regarding “the local method includes code to perform the method operation on the proxy object on the client without going to the server.”

22. **As to claim 16:**

Jones teaches the server comprises a first server and wherein the called method comprises a remote method (316; *fig.3*), further comprising: transmitting, with the client, information indicating the called remote method and remote object corresponding to the proxy object subject on which the remote method is called (*col.9, lines 52-58*); receiving, with the first server, the information indicating the remote method and remote object to execute (*col.9, lines 66-67*); determining, at the first server, whether the indicated remote object is on a second server (*col.10, lines 40-48*); and transmitting information on the indicated remote method and remote object to a second server for execution thereon if the indicated remote object for execution on the second server (*col.11, lines 8-19*).

23. **As to claim 17:**

Jones teaches launching, with the client, an applet downloaded from the first server (*col.8, lines 13-15*), wherein the applet calls the remote method on the proxy object corresponding to the remote object on the second server (*col.8, lines 46-48*, and wherein

the applet communicates the information indicating the remote method and remote object to the first server (*col.8, lines 50-67*).

24. As to claim 18:

Jones teaches the server comprises a first server (*col. 11, lines 8-17*) and wherein generating the at least one proxy object further comprises: receiving, with the first server, a method to instantiate a proxy object for a specified remote object (*col.8, lines 10-15*); determining, at the first server, whether the specified remote object is on a second server (*col.9, lines 52-58*); transmitting, with the first server, the method to instantiate the proxy object to the second server for execution thereon if the remote object is located on the second server (*col.9, line 66-col.10, line 2*).

25. As to claim 19:

Jones teaches returning, with the second server, the instantiated proxy object to the first server to return to the client (*col.8, lines 10-15*).

26. As to claims 20-34:

Note the rejection of claims 1-15 above. Claims 20-34 are the same as claims 1-15, except claims 20-34 are system claims and claims 1-15 are method claims.

27. As to claims 35-47:

Note the rejection of claims 1-13 above. Claims 35-47 are the same as claims 1-13, except claims 35-47 are article of manufacture claims and claims 1-13 are method claims.

28. As to claims 48, 54, and 60:

They include the same limitation as claim 1 above, and are similarly rejected under the same rationale.

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29. **As to claims 49, 55, and 61:**

They include the same limitation as claim 2 above, and are similarly rejected under the same rationale.

30. **As to claims 50, 56, and 62:**

They include the same limitation as claim 5 above, and are similarly rejected under the same rationale.

31. **As to claims 51, 57, and 63:**

They include the same limitation as claim 6 above, and are similarly rejected under the same rationale.

32. **As to claims 52, 58 and 64:**

They include the same limitation as claim 7 above, and are similarly rejected under the same rationale.

33. **As to claims 53, 59, and 65:**

They include the same limitation as claim 11 above, and are similarly rejected under the same rationale.

Conclusion

34. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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- (i) Ainsworth et al. (US 6728788) teaches "Method and system for converting a remote procedure call to a local procedure call when the service is on the same device as the calling client."
 - (ii) Abdelnur (US 6636900) teaches "Method and apparatus for executing distributed objects over a network."
 - (iii) Guthrie et al. (US 6549955) teaches "System and method for dynamic generation of remote proxies."
 - (iv) Wollrath et al. (US 6487607) teaches "Methods and apparatus for remote method invocation."
 - (v) Avvenuti et al. "Embedding remote object mobility in Java RMI" 2001 IEEE, pp. 1-6.
 - (vi) Orfali et al. "The essential Distributed objects survival guide " 1996, page 69.
35. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN H. NGUYEN whose telephone number is (571) 272-3765. The examiner can normally be reached on Monday-Thursday from 8:30AM - 6:00PM. The examiner can also be reached on alternative Friday.
36. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756.
37. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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38. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should be mailed to:

Commissioner for patents
P O Box 1450
Alexandria, VA 22313-1450

A handwritten signature in cursive script, appearing to read "Van H. Nguyen".

Van H. Nguyen